

### **REMARKS**

In the Office Action, the Examiner objects to the specification for "failing to provide proper antecedent basis" for certain claimed subject matter. Office Action, p. 2. While Applicant notes that "the exact terms need not be used *in haec verba* to satisfy the written description requirement of the first paragraph of 35 U.S.C. § 112," Applicant submits herewith amendments to the claims and specification that provides antecedent bases for the exact terminology used in the claim terms. MPEP § 706.03; *Eiselstein v. Frank*, 52 F.3d 1035, 1038, (Fed. Cir. 1995). No new matter has been added.

#### **Claim Amendments**

Claims 29, 30, 37, 38, 44, and 45 were amended to recite "air supply holes" rather than "openings." These amendments are supported throughout the specification, *see, e.g.*, ¶¶[0035], [0040], [0046], and Figs. 6 and 7.<sup>1</sup> Claim 45 was also amended to recite a "media fixing plate" rather than a "fiber fixing plate." This amendment is supported throughout the specification, *see, e.g.*, specification, ¶¶[0031], [0044], and Figs. 2 and 6.

Claims 25 and 34 were amended to include a "density control plate." Support for these amendments is found throughout the specification and drawings, *e.g.*, ¶¶[0044]-[0045] and Figs. 2 and 10.

Claim 28 was amended. Support for these amendments is found throughout the specification and drawings, *see, e.g.*, ¶[0031] and Figs. 2 and 8.

Claim 36 was amended. Support for these amendments is found throughout the specification and drawings, *see, e.g.*, ¶[0031] and Fig. 2.

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<sup>1</sup> All citations herein refer to paragraph numbering in U.S. Patent Publication No. 2007/0193944. The original application did not include paragraph numbering.

Claim 41 was amended to correct a minor typographical error. Support for this amendment is found throughout the specification and drawings, *see, e.g.*, ¶¶[0049]-[0050] and Fig. 13.

New claims 50-53 have been added. Support for these amendments is found throughout the specification and drawings, *see, e.g.*, ¶¶[0044], [0053], [0056], [0057] and Figs. 2, 10 and 12, 13.

The above amendments find clear support either in the written description and/or the drawings. None of these amendments introduce new matter.

#### **Specification Amendments**

Applicant amends the specification at ¶[0031] to state that the main body forms "a treatment cavity." As shown in Fig. 2, the main body clearly forms a treatment cavity. Therefore, as described in the claims, "treatment cavity" is clearly supported by the specification.

Further, Applicant amends the specification at ¶[0044] to state that the density control plate 9 has an "annular" or doughnut shape. This amendment is clearly supported by the drawings as shown in Figs. 2 and 10 at reference number 9. Therefore, as described in the claims, "annular device" is clearly supported by the specification.

In addition, Applicant amends the specification at ¶[0047] to clarify that the supplied passing holes 8 form "openings in the outer wall" of the main body. This amendment is clearly supported by the drawings as shown in Figs. 2 and 9 at reference number 8. Therefore, as described in the claims, "openings in the outer wall" is clearly supported by the specification.

The above amendments find clear support either in the written description and/or the drawings. None of these amendments introduce new matter.

### **§103 Rejections**

Independent claim 25 stands rejected under §103 as being unpatentable over U.S. Patent No. 5,607,593 (Cote) in view of U.S. Patent No. 4,617,120 (Barzuza). As amended, claim 25 requires, *inter alia*, "a density control plate...disposed within the housing below the water guide jacket for increasing a density of the fibers below the water guide jacket and for generally inhibiting the water from flowing downwardly in a direction toward the air inlet." By increasing the density of the fibers disposed within the density control plate, water entering the apparatus through the water guide jacket is inhibited from flowing downward. See, ¶ [0045].

The Examiner acknowledges that Cote does not disclose a density control plate, but cites Iwatsuka's band 28 or wall 42 as analogous to the claimed density control plate. See, Office Action, p. 8. However, neither band 28 nor wall 42 is analogous to the claimed density control plate. Nothing in Iwatsuka describes that band 28 or wall 42 increases the density of the fibers to inhibit the water from flowing in a downward direction, as claimed. Instead, the structure of the filter in Iwatsuka guides the incoming water stream downwardly. Indeed, Iwatsuka states that water enters filter from feed line 4 disposed at the top of the filter. See, e.g., Iwatsuka, Figs. 1-4. The water then passes through the fibers and filtered water enters perforations 20 and 21 in wall 42. See, e.g., Iwatsuka, Fig. 5. The filtered water then downwardly exits the device past band 28 and wall 42. Accordingly, neither band 28 nor wall 42 is analogous to the claimed density control plate which generally inhibits the water from flowing in a downward direction from the water inlet to the air inlet. For at least this reason, claim 25 and its corresponding dependent claims are not rendered obvious.

Further, one of ordinary skill in the art would not modify Cote to include band 28 or wall 42 of Iwatsuka. Cote describes a filtering device having fibers that are fixed at both the top and bottom ends. See, e.g., Cote, Fig. 10. In contrast, Iwatsuka describes a filtering device having fibers fixed only at the bottom end and free flowing at the top end. See, e.g., Iwatsuka, Fig. 7.

Band 28 and wall 42 of Iwatsuka ensure that the fibers do not bend horizontally during the feeding of raw water into the device. Such structure is not needed in the Cote filtering device. Indeed, since Cote's fibers are fixed at both ends there is no possibility that the raw water will horizontally bend the fibers. Accordingly, it would not be obvious to include band 28 or wall 42 of Iwatsuka into the filtering device of Cote. For at least this additional reason, claim 25 and its corresponding dependent claims are not rendered obvious.

Independent claim 34 stands rejected under §103 as being unpatentable over Cote in view of Barzuza. As amended, claim 34 requires "a density control plate comprising an annular plate...and having an opening through which the fibers extend...thereby increasing the density of the fibers in the opening of the annular plate and generally inhibiting the flow of water from the water inlet, through the opening of the annular plate, to the air inlet." By increasing the density of the fibers disposed within the density control plate, water entering the apparatus through the water guide jacket is inhibited from flowing downward. See, ¶ [0045].

The Examiner acknowledges that Cote does not disclose a density control plate, but cites Iwatsuka's band 28 or wall 42 as analogous to the claimed density control plate. See, Office Action, p. 8, 11. However, neither band 28 nor wall 42 is analogous to the claimed density control plate. Nothing in Iwatsuka describes that band 28 or wall 42 increases the density of the fibers to inhibit the flow of water from water inlet, through the density control plate, to the air inlet, as claimed. Instead, the structure of the filter in Iwatsuka guides the flow of water from the water inlet through the alleged density control plate. Indeed, Iwatsuka states that water enters filter from feed line 4 disposed at the top of the filter. See, e.g., Iwatsuka, Figs. 1-4. The water then passes through the fibers and filtered water enters perforations 20 and 21 in wall 42. See, e.g., Iwatsuka, Fig. 5. Thus, the Iwatsuka device guides water from the water inlet and past the alleged density control plate. Accordingly, neither band 28 nor wall 42 is analogous to the claimed density control plate which generally inhibits the water from flowing

from the water inlet and through the density control plate. For at least this reason, claim 34 and its corresponding dependent claims are not rendered obvious.

Further, as discussed above, one of ordinary skill in the art would not modify Cote to include band 28 or wall 42 of Iwatsuka. Thus, for reasons substantially similar to those set forth above, it would not be obvious to include band 28 or wall 42 of Iwatsuka into the filtering device of Cote. For at least this additional reason, claim 34 and its dependent claims are not obvious.

Independent claim 41 stands rejected under §103 as being unpatentable over Cote and Barzuza. Claim 41 requires, *inter alia*, "closing the concentrated waste outlet and opening the clarified water outlet" and "closing the clarified water outlet and opening the concentrated waste outlet." In referring to Cote, the Examiner argues that "when the valve on the waste outlet line (Figure 11, pipe 40) is closed and the valve on the clarified water outlet line, leading to pump 17 is opened, raw water is fed into the housing." Further, the Examiner states that "when the valve on the clarified water outlet line, leading to pump 17, is closed and the valve on the waste outlet line (Figure 11, pipe 40) is opened, air is injected into the porous structure." However, nothing in Cote's disclosure describes these limitations. Instead, Cote merely describes permeate being drawn from the filter by pump 17 and reintroduced in a counterflow through the membrane to detach deposited particles. As this permeate is introduced back into the filter, a cleansing operation is simultaneously carried out using pipe 40. See, Cote, col. 12, ll. 58-67. Thus, both pump 17 and pipe 40 are both open during the cleansing process. For at least this reason, independent claim 41 and its corresponding dependent claims are not rendered obvious.

Respectfully submitted,

COATS & BENNETT, P.L.L.C.



Kathleen A. Cavanagh  
Registration No.: 59,911  
Telephone: (919) 854-1844  
Facsimile: (919) 854-2084

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